

Metal injection molding material and metal injection molding

We claim:-

- 5 1. A metal injection molding material which contains
 - a) from 40 to 70% by volume of metal powder, including at least 50% by weight,
based on the total amount of metal, of an iron-containing powder, at least 90% by
weight, based on the amount of this iron-containing powder, of the particles of
which have an effective diameter of at least 40 micrometers,
 - 10 b) from 30 to 60% by volume of a thermoplastic binder and
 - c) from 0 to 5% by volume of a dispersant and/or other assistants.
- 15 2. A metal injection molding material as claimed in claim 1, wherein at least 90% by
weight, based on the amount of the iron-containing powder, of the particles of the iron-
containing powder have an effective diameter of at least 50 micrometers.
- 20 3. A metal injection molding material as claimed in claim 2, wherein at least 90% by
weight, based on the amount of the iron-containing powder, of the particles of this iron-
containing powder have an effective diameter of at least 60 micrometers.
- 25 4. A metal injection molding material as claimed in claim 1, wherein the total amount of
the metal powder contained comprises at least 90% by weight of iron.
5. A metal injection molding material as claimed in claim 1, wherein the thermoplastic
binder consists of a mixture of from 50 to 100% by weight of a polyoxymethylene
homo- or copolymer and from 0 to 50% by weight of a polymer which is immiscible
with the polyoxymethylene homo- or copolymer and can be removed thermally without
a residue, or of a mixture of such polymers.
- 30 6. A metal injection molding process, wherein a metal injection molding material which
contains
 - a) from 40 to 70% by volume of metal powder, including at least 50% by weight,
based on the total amount of metal, of an iron-containing powder, at least 90% by
weight, based on the amount of this iron-containing powder, of the particles of
which have an effective diameter of at least 40 micrometers,
 - 35 b) from 30 to 60% by volume of a thermoplastic binder and
 - c) from 0 to 5% by volume of a dispersant and/or other assistants,is shaped by injection molding, the injection molded parts are freed from the binder
and said parts freed from the binder are sintered.